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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,327	07/25/2001	Masaru Yoshitake	211908US0PCT	5725

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EXAMINER	
WEINER, LAURA S	

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/869,327	YOSHITAKE ET AL.	
	Examiner	Art Unit	
	Laura S Weiner	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 10-25* is/are pending in the application.

4a) Of the above claim(s) *3,14-16 and 24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6,10-12,17,18,20,21,23 and 25* is/are rejected.

7)☒ Claim(s) *7,13,19 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14901 3-2712
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species 11, claims 1-2, 4-7, 10-13, 17-23, 25 in Paper dated 12-5-03 is acknowledged. The traversal is on the ground(s) that the Office has not applied the same standard of unity of invention as the International Searching Authority. This is not found persuasive because under PCT Rule 13.2, Applicant has not provided evidence to show that the solvent-soluble fluorine-containing polymer is novel and contains a corresponding special technical feature as shown in US 6,087,032 which teaches that Formulas 4 and 5 are known in a polymer electrolyte fuel cell. Therefore, species 1-13 does not provide any contribution over the prior art.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 3, 14-16, 24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper filed 12-5-03.

The examiner has found Species 11, Formula 11 allowable.

Claim Rejections - 35 USC § 112

3. Claims 4, 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 is rejected because the top two formulas are not labeled as Formulas 5 and 6 whereas Formulas 7-13 are labeled.

Claim 10 is rejected because the claim is dependent on claims 8-9 which have been cancelled.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Usami et al. (JP 2-249969, abstract).

Usami et al. teaches a fuel cell comprising electrodes 1a and 1b having substrates 1a and 1b to form film layers and catalyst layers 2a and 2b using fibrillar PTFE as coating materials 7a and 7b.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-2, 4-6, 11-12, 17-18, 20-21, 23, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshitake et al. [(6,087,032) or JP 9-320611, abstract] in view of Hirano [(6,106,965) or (JP 9-265996, abstract)].

Yoshitake et al. teaches a polymer electrolyte fuel cell comprising a membrane solid polymer electrolyte, a fuel electrode disposed on one side of the polymer electrolyte and an air electrode disposed on the other side wherein each of the fuel electrode and air electrode is made of a gas diffusion electrode having a catalyst covered with a fluorocarbon. Yoshitake et al. teaches in column 2, lines 61-67, that the preparation of the gas diffusion electrode comprises a mixed liquid comprising a catalyst, an ion exchange resin and a water repellant, etc. Yoshitake et al. teaches in column 3, lines 40-67, that the water repellant may be a soluble fluorine-containing polymer which are high molecular weight polymers which are solid from room temperature to 150 degrees C and those having substantially no ion exchange groups in the repeating units except for the terminals of the high molecular polymers. As the soluble perfluorocarbon polymer, preferred is a thermoplastic polymer having cyclic repeating units of the formula *[Formula 5 of the invention]*. Yoshitake et al. teaches in column 4, lines 25-35, that the water repellant is used preferably in an amount of from 0.01 to 30 wt% based on the catalyst layer of the electrode and teaches in column 5, lines 38-44, that a method for forming a gas diffusion electrode can be by spraying, etc.

Yoshitake et al. discloses the claimed invention except for specifically teaching that the current collectors are made of a porous sheet having a solvent-soluble fluorine-containing polymer.

Hirano ('965) teaches a solid polymer electrolyte fuel cell comprising a solid polymer electrolyte membrane, an anode side electrocatalyst electrode and a cathode side electrocatalyst layer. Hirano teaches in column 5, lines 42-61, Figure 2 shows the details of the lamination of the electrolyte membrane 2 disposed on a platinum carbon black composite sputtered membrane 431 disposed on an electrocatalyst layer 43 disposed on a diffusion layer 42 and a carbon cloth 41 outside thereof.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adhere a solution of a fluoropolymer having substantially no ion-exchange groups and is soluble in a solvent to the carbon cloth portion of the electrode structure taught by Hirano to incur water-repellent treatment as taught by Yoshitake et al. because both relate to a solid polymer type fuel cell.

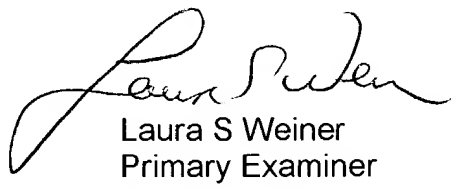
Allowable Subject Matter

8. Claims 7, 13, 19, 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1700.



Laura S Weiner
Primary Examiner
Art Unit 1745

January 21, 2004